



25190

Customer Number

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

DEBRA R. REINHART, et al.

Katherine W.

Application No.: 10/701,412

Filed: 10/31/2003

For: ZERO-VALENT METAL EMULSION
FOR REDUCTIVE DEHALOGENATION
OF DNAPLs

)
) Docket No.: KSC-12246-2
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) Examiner: Mitchell,
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) Art Unit: 3677
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DECLARATION UNDER 37 CFR 1.132

I am Jacqueline Quinn Ph.D. and I Declare that to the best of my knowledge and belief the following is true:

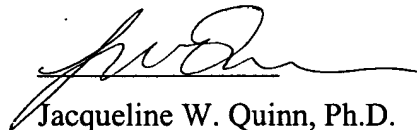
1. I am an environmental engineer and research scientist with NASA's Kennedy Space Center. In my current position, I am responsible for the development and testing of new and evolving groundwater treatment technologies that may have application to NASA Centers where contamination persists in the environment.
2. In an effort to obtain Phase-I funding of Proposal # 990094 in 1999, the proposal was submitted with a Technical Abstract describing the proposed study. In the Abstract, it was stated that the proposed study would demonstrate the feasibility of using emulsified nanoscale iron particles to remediate pools of DNAPLs using a surfactant, stabilized oil-in-water emulsion with nanoscale iron particles contained within the emulsion particles.
3. The technical abstract did not state the composition of the surfactant because, at the time the abstract was prepared and published in 1999, applicants did not know the composition of the surfactant. I was only through the inventive process that is the basis of the present invention that it was discovered that a food-based vegetable oil surfactant would create a proper oil membrane that would allow migration of DNAPLs through the membrane into contact with the nanoscale iron particles enclosed therein while, at the same time, retaining the iron particles within the emulsion. Because this novel and unobvious aspect of the invention was unknown at the time of

creation of the abstract for Proposal # 990094, this document fails to teach the presently claimed invention.

4. The present invention has always been directed to an emulsion wherein a water solution of nanoscale iron particles was enclosed in an oil membrane, i.e., water-in-oil. The specification as originally filed inadvertently misstated the invention as an oil-in-water emulsion. This was never and, more importantly, could not be the invention because of the hydrophobic relationship between the water and oil. This same inadvertent misstatement i.e., oil-in-water appeared in the technical abstract of Proposal #990094. In the proposal, the resulting study and the present invention, the subject matter comprises a water-in-oil emulsion which is itself placed into ground water contaminated with DNAPLs. For this reason, the proposed change in the Specification to change "oil-in-water" to read "water-in-oil" on page 8, lines 4, 5 does not constitute the introduction of new matter into the application.

I declare under the laws of the United States of America that the foregoing is true and correct.

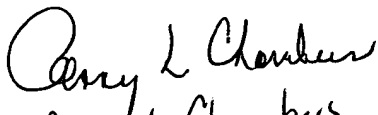
Executed on 11/8/05
(Month/Day/Year)


Jacqueline W. Quinn, Ph.D.

STATE OF FLORIDA

COUNTY OF Brevard

Sworn to (or affirmed) and subscribed before me on this 8th day, of
November, 2005, by _____
Jacqueline W. Quinn


Penny L. Chambers
My Commission Expires 7/17/08

